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System Guide Specification for Paint Chip Industrial Floor System S-5001
SECTION 09 94 00 DECORATIVE FINISHING AND
SECTION 32 01 26.74 CONCRETE OVERLAYS

This product guide specification is written according to the Construction Specifications Institute (CSI) with numbers and titles from the Master Format 2004 Edition. This section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building codes. Coordinate this section with other specification sections and drawings. This is the recommended specification for the Super-Krete Industrial Flooring System and must be accompanied by Super-Krete Specification No. S-1 for Surface Preparation.

The Super-Krete S-5001 Industrial/Commercial/Residential Flooring System is designed for use a decorative flooring system for heavily used walking and vehicle traffic. Used primarily for industrial, commercial and residential floors such as but not limited to industrial floors, garages, commercial stores and anywhere an easily cleanable, petroleum and chemical resistant finish is required. This system is extremely versatile and available in a selection of 20 colors (refer to Super-Krete Color Palette). Paint Chips™ may be added to the surface coloring system to give the illusion of terrazzo or granite, and provides a hard, high gloss finish. Super-Grit™ may be added to sealer for added skid-resistance.

Super-Krete products are professional, contractor grade products. Training in the use of these products is available. Consult Super-Krete for assistance locating contractors in your area or training dates.

Part 1 – GENERAL

1.1 SUMMARY

A. SECTION INCLUDES:

- a. Application procedure to create an aesthetic industrial floor overlay system designed for heavy use that has a resilient wearing surface suitable for use in factories, industrial warehouses, aircraft hangars, kitchens, airports, etc.
- b. Provide all written materials, procedures/installation guidelines and site services necessary to complete the installation as herein specified.

B. RELATED SECTIONS

- a. The work shall consist of preparation of the substrate in accordance with Super-Krete Specification S-1 Surface Preparation. The system shall have the color, texture and thickness specified by the Owner. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's Specifications.

1.2 QUALITY ASSURANCE

- A. Provide Super-Krete products required for this system installation as outlined in Application Procedures.
- B. A Manufacturer's Representative shall be present during installation of product from surface preparation until deemed necessary.
- C. Manufacturer Qualifications:
 - a. Manufacturer shall have a minimum of 20 years experience in the production, sales and technical support of cementitious coatings, industrial flooring and related materials.
 - b. No requests for substitutions shall be considered that would change the generic type of the specified system.
 - c. System shall be in compliance with requirements of United States Department of Agriculture (USDA) and Food and Drug Administration (FDA).



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- D. Installer Qualifications:
 - a. All installers of this system must apply and file with Manufacturer a copy of project specifications, Applicator Certificate and required products list, tools and equipment to be utilized on the project prior to application for manufacturer warranty.
 - b. Installers are to be experienced with similar products and have an appropriate sized crew for the size of the project.
- E. Samples:
 - a. A 12" X 12" square sample of the proposed system shall be provided by the Installer for approval. Color, texture and thickness shall be representative of overall appearance of finished system.
- F. Pre-Bid Conference:
 - a. A pre-bid conference shall be held between prospective installers and the Engineer to resolve design details prior to bidding of project.

1.3 SUBMITTALS

- A. Product Data:
 - a. Manufacturer's product literature including MSDS shall be submitted and shall consist of detail specifications and job-specific application instructions for project.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Packaging and Shipping
 - a. All components of the system shall be delivered in unbroken original packages bearing the Manufacturer's name and brand designation, batch number and date of manufacture.
- B. Storage and Protection:
 - a. The Installer shall be provided with a storage area for all components. The area shall be between 35 F and 85 F, dry, out of direct sunlight, and elevated from the floor to avoid contact with moisture, and in accordance with the Manufacturer's recommendations and relevant health and safety regulations. Liquid products are to be kept from freezing and dry goods to be protected from humidity.
 - b. Copies of MSDS for all components shall be kept on site for review by the Engineer and other personnel.
 - c. Protect materials during handling and application to prevent damage or contamination.
 - d. Dispose of cementitious materials as concrete and dispose of solvent-based materials in accordance with requirements of local authorities having jurisdiction.
 - e. Product to be purchased through authorized Super-Krete distributor.

1.5 SEQUENCING AND SCHEDULING

- A. The installer, general contractor and owner shall agree upon a schedule for coordination between trades working in the area which is to receive the system.

1.6 WARRANTY

- A. Super-Krete warrants that material shipped to buyers at the time of the shipment substantially free from material defects and will perform substantially to Super-Krete



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- published if used in accordance with the latest prescribed procedures and prior to the expiration date.
- B. Super-Krete liability with respect to this warranty is strictly limited to the value of the material purchase.
 - C. Super-Krete has no responsibility for the application and processing of products and is under no circumstances liable to any third party whatsoever.
 - D. System applied will have a warranty of 3 years from date of installation against delamination when applied per specification by Certified Applicators with a warranty form on file.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Provide products from the following manufacturer:
 - a. Super-Krete International, Inc. 1290 North Johnson Avenue #101, El Cajon, CA 92020 USA 619 401 8282 / 800 995 1716 / 619 401 8288 FAX www.super-krete.com
 - b. Manufacturer of approved system shall be single source and made in the USA.

2.2 APPROVED MATERIALS

- A. INDUSTRIAL FLOORING SYSTEM
 - a. S-1 Surface Preparation Specification & Procedures
 - b. S-12000 Heavy Duty Degreaser
 - c. S-1300 Pene-Krete
 - d. S-9300 Super-Krete Bond-Kote
 - e. S-3500 Elastique Matting
 - f. S-11000 Ure-Kote
 - g. S-8402 Paint Chips
 - h. S-8350 Supra-Seal – VOC Compliant for use in Riverside, Orange, San Bernardino, Los Angeles Counties (California)
 - i. S-8400 Supra-Seal II - All other areas

2.3 RELATED MATERIALS

- A. Proprietary Based Specification:
 - a. Products and System shall be manufactured by Super-Krete International, Inc.
- B. Surface Cleaning:
 - a. The surface cleaning system shall be S-12000 Heavy Duty Degreaser. Performance of this product is required to ensure the maximum chemical reaction within the pores of concrete. Required pH of this cleaning product is 11.5.
- C. Concrete Treatment:
 - a. Concrete hardener, densifier, moisture vapor reducer: The moisture vapor reduction and chemical encapsulation treatment shall be a combination of S-1300 Pene-Krete and S-9300 Bond-Kote.
- D. Crack Treatment:
 - a. Cracks shall be addressed using Super-Krete Crack Treatment System, S-3500 Elastique Matting, alkaline-resistant fibermesh in conjunction with S-9300 Bond-Kote.



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- E. Toppings:
 - a. The Portland cement-based underlayment or topping shall be based upon the specified finished appearance. Portland-cement based underlayment or topping is a single-component, ready-mix material for mixing quality control.
- F. Water for mixing shall be clean, potable and not exceed 70° F.
- G. Acrylic/Urethane Paint:
 - a. The color concrete paint shall be based upon the specified finished appearance. Super-Krete Ure-Kote is a ready-to-use pre-mixed solution. May not be diluted.
- H. Paint Chips:
 - a. The decorative paint chips shall be based upon the specified finished appearance.
- I. Protective Concrete Sealer:
 - a. The protective sealer shall meet or exceed ASTM standards for co-efficient of friction required for the project as specified by the architect.

2.4 MIX DESIGNS

- A. S-12000 Heavy Duty Degreaser is ready-to-use. Do not dilute. Mix thoroughly for one minute before use.
- B. S-1300 Pene-Krete is ready-to-use. Do not dilute. Mix thoroughly for one minute before use.
- C. S-3500 Elastique Matting shall be cut to length of crack and shall cover 3" on either side of crack to be treated.
- D. S-9300 Bond-Kote is ready-mixed, add water only. Mix mechanically using a ½" drill and mixing paddle or plaster mixer. Bond-Kote shall be applied using squeegee, trowel or other system(s) approved for use by the Manufacturer. Bond-Kote is to be applied at a maximum thickness of 1/8" per coat. Multiple coats may be required for proper treatment.
- E. S-11000 Ure-Kote is ready-to-use for roller applications, or can be modified for squeegee applications. Mix mechanically using a ½" drill and mixing paddle or plaster mixer. Two applications of S-11000 Ure-Kote in desired color shall be applied to cured Bond-Kote surface by roller or squeegee.
- F. S-9500 Color Stain is ready-to-use. Do not dilute. Mix thoroughly for one minute before use. For advanced coloring techniques, two applications of S-9500 Color Stain in desired color shall be applied over cured Ure-Kote surface by means of an airless sprayer.
- G. S-8402 Paint Chips are multi-colored, random sized and made from resins and other materials ready-to-use. No mixing or modification required.
- H. S-8350 Supra-Seal Sealer is ready-to-use and *compliant with California VOC requirements*. It may be thinned to a maximum of 20% with Acetone for workability.
- I. S-8400 Supra-Seal II Sealer is not permitted for use in certain counties in California (see above). It is ready-to-use and may be thinned a maximum of 20% with Acetone for workability.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Application will proceed when the moisture vapor emission rates from the slab does not exceed 5 lbs per 1,000 sf / 24 hrs. The test method is ASTM E1869-98 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- B. If the vapor drive exceeds 5 lbs per 1,000 sf / 24 hrs then the Owner and/or Engineer shall be notified and advised of additional cost for the possible installation of a vapor

- mitigation system that has been approved by the manufacturer or other means to lower the value to the acceptable limit.
- C. Examine surface to receive treatment. Do not begin installation until substrates have been properly prepared. Surfaces that are not profiled to the acceptable level will not provide the required penetration and cohesive bond between toppings and substrates. Notify architect if surfaces are not acceptable.
 - D. Examine substrate to ensure proper expansion joints were placed. Add additional expansion joints as needed to relieve stress on any substantial cracking.
 - E. If substrate preparation is the responsibility of another installer, notify architect of unsatisfactory preparation before proceeding.

3.2 SITE REQUIREMENTS

- A. Application may proceed while air, material and substrate temperatures are between 55° F and 90° F provided the substrate temperature is at least 5 degrees F above the dew point. Outside of this range, the Manufacturer shall be consulted. SUPER-KRETE products are not to be applied when precipitation is expected within 24 hours following completion of application or when rain is imminent.
- B. The Applicator shall ensure that adequate ventilation is available for the work area. This shall include the use of manufacturer's approved fans, smooth bore tubing and closure of the work area.
- C. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.
- D. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.
- E. New concrete shall be moisture cured for a minimum of 7 days and have fully cured a minimum of 28 days in accordance with ACI-308 prior to the application of the coating system pending moisture tests.
 - a. Sealers and membrane-forming curing agents should not be used.
 - b. Concrete surfaces on grade shall have preferably been constructed with a vapor barrier for additional protection against the effects of vapor transmission and possible delamination of the system.
- F. Safety Requirements
 - a. All open flames and spark-producing equipment shall be removed from the work area prior to commencement of application.
 - b. "No Smoking" signs shall be posted at the entrances to the work area.
 - c. The Owner shall be responsible for the removal of foodstuffs from the work area.
 - d. Non-related personnel in the work area shall be kept to a minimum.

3.3 PREPARATION

- A. Prepare surfaces using the methods recommended by the Manufacturer for achieving the best result for the substrate under the project conditions. Super-Krete recommends the method of shotblasting, grinding, scarifying or high pressure waterblasting to remove existing coatings, paints, sealers or other bond-breakers from the existing surface.
- B. All cementitious based substrates must be structurally sound, solid, profiled and of adequate porosity to provide product penetration and co-adhesive bond. Surface profile shall be that of ICRI's #4 on surface profile template. Refer to International Concrete Repair Institute's surface profile template.
- C. The substrate shall be cleaned and prepared in accordance with manufacturer specifications and be free of any surface contamination that may create a bond-breaker and prevent product from penetrating the surface and providing a co-adhesive bond.
- D. Protect adjacent surfaces not designated to receive treatment.



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- E. When applying Super-Krete Portland cement-based underlayments and toppings the surface will require a surface dampened lightly with clean water to open the pores of the substrate to achieve a co-adhesive bond, to dissolve fine dust particles and to provide additional workability.
- F. All cracks and spalls shall be repaired prior to installing the underlayment or toppings to resist future crack flexing.
- G. Clean, repair and honor all control joints during entire application process.
- H. Clean and repair all cracks and spalls in accordance with manufacturer's specifications.
- I. Allow all surface repairs to cure for 24 hours before applying underlayment or toppings.

3.4 PRECAUTIONS

- A. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
- B. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
- C. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
- D. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

3.5 APPLICATION OF CONCRETE CLEANER

- A. Concrete Cleaner
 - b. All surfaces to be coated must be thoroughly cleaned with S-12000 Heavy Duty Degreaser.
 - c. Heavy Duty Degreaser contains a high level of alkalinity which encourages a strong reaction with moisture vapor barrier to be applied as in Section 3.5.1.
 - d. Heavy Duty Degreaser shall be used to remove any contaminants on the surface. Apply Heavy Duty Degreaser undiluted using a hand-held pump sprayer and immediately scrub the surface with a stiff bristled broom.
 - e. Scrub Heavy Duty Degreaser into the surface using a stiff broom and allow to sit for a minimum of 30 minutes for deep penetration.
 - f. Rinse thoroughly using clean water. High pressure water-blasting may be required for heavy-duty cleaning.

3.5.1 APPLICATION OF PENETRATING SEALER AS A MOISTURE BARRIER: INTERIOR & EXTERIOR

- A. Existing Concrete up to 4" Thick:
 - a. Wet surface with clean water and allow surface to dry.
 - b. Apply Pene-Krete undiluted at a rate of 300 square feet per gallon by saturating surface using a low-pressure sprayer.
 - c. Immediately spread the material with a soft-bristled broom and not allowing Pene-Krete to puddle. Any Pene-Krete left on the surface will create an unwanted bond-breaker and will have to be removed. Ensure no Pene-Krete is left on the surface.
 - d. In areas where Pene-Krete is being absorbed more readily, spray more Pene-Krete and work it into the surface with a broom.
 - e. Continue to spray and broom Pene-Krete in until the entire surface area to be treated has been saturated with Pene-Krete, and ensure that Pene-Krete is not puddling on the surface.



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- f. Allow the treated surface to cure for 24 hours followed by pressure washing or high-pressure water-blasting for exterior surfaces to remove any excess chemicals forced to the surface during the curing period.
- B. Existing Concrete up to 8" Thick:
- a. Wet surface with clean water and allow surface to dry.
 - b. Apply Pene-Krete undiluted at a rate of 300 square feet per gallon by saturating surface using a low-pressure sprayer.
 - c. Immediately spread the material with a soft-bristled broom and not allowing Pene-Krete to puddle. Any Pene-Krete left on the surface will create an unwanted bond-breaker and will have to be removed. Ensure no Pene-Krete is left on the surface.
 - d. In areas where Pene-Krete is being absorbed more readily, spray more Pene-Krete and work it into the surface with a broom.
 - e. Continue to spray and broom Pene-Krete in until the entire surface area to be treated has been saturated with Pene-Krete, and ensure that Pene-Krete is not puddling on the surface.
 - f. Allow concrete to dry for 1 hour and re-saturate the surface with water to ensure full penetration of Pene-Krete into the concrete substrate.
 - g. Repeat water saturation procedure after 1 hour.
 - h. Allow the treated surface to cure for 24 hours followed by pressure washing or high-pressure water-blasting for exterior surfaces to remove any excess chemicals forced to the surface during the curing period.

3.5.2 APPLICATION OF OVERLAYS AND TOPPING

- A. Cementitious Coating
- a. Bond-Kote shall be applied using squeegee, trowel or other system(s) approved for use by the Manufacturer.
 - b. Deep repairs shall be consolidated or otherwise vibrated so as to consolidate the material before final finishing. Neither feather edging nor broom finishing shall be permitted.
 - c. Bond-Kote is to be applied at a maximum thickness of 1/8" per coat.
 - d. Two applications (1/64"-1/16" thick) of Super-Krete Bond-Kote Mix shall be applied over all bare concrete prior to any finish coatings, these applications will make the floor smooth and reduce moisture vapor emissions significantly. Reducing vapor emissions reduces the chances of flooring failure due to delamination. Allow each application to dry thoroughly before additional application is applied.
 - e. Remove any ridges or irregularities using a floor scraper between each application. Check the surface for uniformity using a string line and apply additional applications if necessary.
 - f. The finished surface shall be free of all ridges and tool marks.

3.5.3 APPLICATION OF WATER BASED ACRYLIC/URETHANE PAINT

- A. Water Based Acrylic/Urethane Paint (Color)
- a. Two applications of S-11000 Ure-Kote shall be applied to dry surface by means of roller or brush at a rate of 175 SF per gallon.
 - b. Two applications shall be applied at 4 hour intervals. Allow 24 hours for Ure-Kote to cure before applying protective sealer. S-11000 Ure-Kote provides a solid, painted finish.

3.5.4 APPLICATION OF COLORED PAINT CHIPS

- A. S-8402 Paint Chips
 - a. PAINT CHIPS shall be broadcast directly on to the still wet second coat of S-11000 at the desired rate to achieve the desired effect or look.
 - b. After paint chips have been broadcast and second coat is dry, using a floor scraper, break down any paint chips that are standing up.
 - c. Allow 4 to 24 hours and apply two coats of Supra Seal Sealer at 4 hour intervals to the surface using an airless sprayer or ¼" nap non-shed roller.

3.5.5 APPLICATION OF PROTECTIVE SEALERS

- A. S-8350 Supra-Seal and S-8400 Supra Seal II Sealers
 - a. Supra-Seal Sealers shall be thinned no more than 20% by volume with Acetone for ease of application.
 - b. Supra-Seal Sealers shall be applied over cured Ure-Kote in 2 applications at 4 hour intervals by airless sprayer or roller at a rate of 300 SF per gallon. Sanding between coats may be required to ensure adhesion. Ensure that additional coats are applied within the appropriate time frame.
 - c. Allow 24 hours to cure before allowing foot traffic and 72 hours before allowing vehicle traffic.

3.6 BOND TEST

- A. Random tests for adequate bond strength shall be conducted on the substrate while the surface preparation is ongoing and prior to application of the color, in accordance with the Manufacturer's recommendations, at a minimum frequency of three tests per 5000 sf. Smaller areas shall receive a minimum of three tests.
- B. Based on the test results, additional substrate preparation may be required before proceeding with the installation of the system.

3.7 FIELD QUALITY CONTROL

- A. Test, Inspection
 - a. The following tests shall be conducted by the Installer:
 - i. Temperature
 - 1. Air, substrate temperatures and, if applicable, dew point.
 - ii. Coverage Rates
 - 1. Rates for all layers shall be monitored by checking quantity of material used against the area covered.
 - 2. Super-Krete products are available as ready-mixed pre-package goods that require minimal mixing (add water only) or are ready to use as packaged. This provides quality field control when mixing and applying product. Ready-mixed products allow the field superintendent or architect to properly estimate the proper amount of material to be used based upon the coverage rate of each unit or product.
 - 3. For testing of product Super-Krete International, Inc. will provide an unopened pre-packaged container of the required product to be tested by an independent laboratory specializing in the required test procedures. Since the underlayment and topping products contain Portland cement, the finished surface will vary



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in color the same as traditional concrete. S-11000 Ure-Kote paint is available to establish a more consistent colored finish.

4. Precautions and cleaning are the responsibility of the General Contractor until project completion.

3.8 MAINTENANCE

- A. Clean and reseal as required depending upon traffic conditions.
- B. Clean floor regularly with S-12000 Heavy Duty Degreaser and rinse with water.
- C. Clean up spills immediately.
- D. Frequent, extreme cleaning and using heavy, abrasive cleaning equipment or exposure to sharp metal objects will wear protective sealers. Standard re-coating for vehicular applications is typically performed at 12-14 months for continuous protection.

END OF SECTION